Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL GUIDELINE CLEARINGHOUSE

General

Guideline Title

Fetal growth restriction.

Bibliographic Source(s)

American College of Obstetricians and Gynecologists (ACOG). Fetal growth restriction. Washington (DC): American College of Obstetricians and Gynecologists (ACOG); 2013 May. 12 p. (ACOG practice bulletin; no. 134). [142 references]

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: American College of Obstetricians and Gynecologists (ACOG). Intrauterine growth restriction. Washington (DC): American College of Obstetricians and Gynecologists (ACOG); 2000 Jan. 12 p. (ACOG practice bulletin; no. 12). [108 references]

Recommendations

Major Recommendations

The grades of evidence (I-III) and levels of recommendations (A-C) are defined at the end of "Major Recommendations."

The following recommendations and conclusions are based on good and consistent scientific evidence (Level A):

- Umbilical artery Doppler velocimetry used in conjunction with standard fetal surveillance, such as nonstress tests, or biophysical profiles, or both, is associated with improved outcomes in fetuses in which fetal growth restriction has been diagnosed.
- When delivery for fetal growth restriction is anticipated before 34 weeks of gestation, antenatal corticosteroids should be administered before delivery because they are associated with improved preterm neonatal outcomes.
- For cases in which delivery occurs before 32 weeks of gestation, magnesium sulfate should be considered for fetal and neonatal neuroprotection.
- Nutritional and dietary supplemental strategies for the prevention of fetal growth restriction are not effective and are not recommended.

The following recommendations and conclusions are based primarily on consensus and expert opinion (Level C):

- Fetal growth restriction alone is not an indication for cesarean delivery.
- The optimal timing of delivery of the growth-restricted fetus depends on the underlying etiology of the growth restriction (if known) as well as the estimated gestational age.

Definitions:

Grades of Evidence

I Evidence obtained from at least one properly designed randomized controlled trial

II-1 Evidence obtained from well-designed controlled trials without randomization

II-2 Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one center or research group

II-3 Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments also could be regarded as this type of evidence.

III Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees

Levels of Recommendations

Level A — Recommendations are based on good and consistent scientific evidence.

Level B — Recommendations are based on limited or inconsistent scientific evidence.

Level C — Recommendations are based primarily on consensus and expert opinion.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

- Fetal growth restriction (also known as intrauterine growth restriction)
- Small for gestational age (SGA)

Note: In this document, the term *fetal growth restriction* will be used to describe fetuses with an estimated fetal weight that is less than the 10th percentile for gestational age, whereas the term *small for gestational age (SGA)* will be used exclusively to describe newborns whose birth weight is less than the 10th percentile for gestational age.

Guideline Category

Counseling

Diagnosis

Evaluation

Management

Risk Assessment

Screening

Clinical Specialty

Obstetrics and Gynecology

Intended Users

Physicians

Guideline Objective(s)

- To aid practitioners in making decisions about appropriate obstetric and gynecologic care
- To review the topic of fetal growth restriction with a focus on terminology, etiology, diagnostic and surveillance tools, and guidance for management and timing of delivery

Target Population

- All pregnant women (screening)
- Pregnant women carrying fetuses with diagnosed or suspected fetal growth restriction (management)

Interventions and Practices Considered

Screening/Diagnosis

1. Physical examination and medical/obstetric history, including fundal height measurements
2. Ultrasonographic diagnosis and evaluation
    - Biometric measurements: biparietal diameter, head circumference, abdominal circumference, femur length
    - Doppler velocimetry evaluation

Management

1. Serial ultrasonographic measurements of fetal biometry and amniotic fluid volume
2. Antenatal surveillance with umbilical artery Doppler velocimetry and antepartum testing (e.g., nonstress tests or biophysical profiles)
3. If delivery occurs before 32-34 weeks gestation
    - Antenatal corticosteroids
    - Magnesium sulfate

Note: Interventions that were considered but not recommended include nutritional and dietary supplemental strategies, caesarean delivery (for fetal growth restriction alone).

Major Outcomes Considered

- Predictive value of risk factors for intrauterine growth restriction
- Efficacy of diagnostic tests
- Perinatal morbidity and mortality
- Birth weight

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

The MEDLINE database, the Cochrane Library, and the American College of Obstetricians and Gynecologists' own internal resources and documents were used to conduct a literature search to locate relevant articles published between January 1990–January 2013. The search was restricted to articles published in the English language. Priority was given to articles reporting results of original research, although review articles and commentaries also were consulted. Abstracts of research presented at symposia and scientific conferences were not considered adequate for inclusion in this document. Guidelines published by organizations or institutions such as the National Institutes of Health and the American College of Obstetricians and Gynecologists were reviewed, and additional studies were located by reviewing bibliographies of identified articles. When reliable research was not available, expert opinions from obstetrician–gynecologists were used.

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Studies were reviewed and evaluated for quality according to the method outlined by the U.S. Preventive Services Task Force:

I Evidence obtained from at least one properly designed randomized controlled trial.

II-1 Evidence obtained from well-designed controlled trials without randomization.

II-2 Evidence obtained from well-designed cohort or case–control analytic studies, preferably from more than one center or research group.

II-3 Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments also could be regarded as this type of evidence.

III Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees.

Methods Used to Analyze the Evidence

Review of Published Meta-Analyses

Systematic Review

Description of the Methods Used to Analyze the Evidence

Not stated

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Analysis of available evidence was given priority in formulating recommendations. When reliable research was not available, expert opinions from obstetrician-gynecologists were used. See also the "Rating Scheme for the Strength of Recommendations" field regarding Level C recommendations.

Rating Scheme for the Strength of the Recommendations

Based on the highest level of evidence found in the data, recommendations are provided and graded according to the following categories:

Level A — Recommendations are based on good and consistent scientific evidence.

Level B — Recommendations are based on limited or inconsistent scientific evidence.

Level C — Recommendations are based primarily on consensus and expert opinion.

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

Internal Peer Review

Description of Method of Guideline Validation

Practice Bulletins are validated by two internal clinical review panels composed of practicing obstetrician-gynecologists generalists and sub-specialists. The final guidelines are also reviewed and approved by the American College of Obstetricians and Gynecologists (ACOG) Executive Board.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

- Appropriate management of pregnancies at risk for intrauterine growth restriction
- Umbilical artery Doppler velocimetry in the management of fetal growth restriction is associated with a reduction in perinatal death.

Potential Harms

Not stated

Qualifying Statements

Qualifying Statements

The information is designed to aid practitioners in making decisions about appropriate obstetric and gynecologic care. These guidelines should not be construed as dictating an exclusive course of treatment or procedure. Variations in practice may be warranted based on the needs of the individual patient, resources, and limitations unique to the institution or type of practice.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Implementation Tools

Audit Criteria/Indicators

Foreign Language Translations

Patient Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Staying Healthy

IOM Domain

Effectiveness

Identifying Information and Availability

Bibliographic Source(s)

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Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2000 Jan (revised 2013 May)

Guideline Developer(s)

American College of Obstetricians and Gynecologists - Medical Specialty Society

Source(s) of Funding

American College of Obstetricians and Gynecologists (ACOG)

Guideline Committee

American College of Obstetricians and Gynecologists (ACOG) Committee on Practice Bulletins-Obstetrics and the Society for Maternal-Fetal Medicine Publications Committee

Composition of Group That Authored the Guideline

American College of Obstetricians and Gynecologists (ACOG) committees are created or abolished and their overall function defined by the Executive Board. Appointments are made for one year, with the understanding that such appointment may be continued for a total of three years. The majority of committee members are Fellows, but Junior Fellows also are eligible for appointment. Some committees may have representatives from other organizations when this is particularly appropriate to committee activities. The president elect appoints committee members annually.

Financial Disclosures/Conflicts of Interest

Not stated

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Guideline Availability

Electronic copies: None available

Print copies: Available for purchase from the American College of Obstetricians and Gynecologists (ACOG) Distribution Center, PO Box 933104, Atlanta, GA 31193-3104; telephone, 800-762-2264; e-mail: sales@acog.org. The ACOG Bookstore is available online at the ACOG Web site.

Availability of Companion Documents

A proposed performance measure is included in the original guideline document.

Patient Resources

The following is available:

- Frequently asked questions: Special tests for monitoring fetal health. American College of Obstetricians and Gynecologists (ACOG); 2011 Aug, 3 p. Electronic copies: Available in Portable Document Format (PDF) from the American College of Obstetricians and Gynecologists (ACOG) Web site. Copies are also available in Spanish.

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better

understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC Status

This NGC summary was completed by ECRI on September 14, 2004. The information was verified by the guideline developer on December 8, 2004. This NGC summary was updated by ECRI Institute on May 30, 2013.

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